31 Mukherjea O. Y-4,5 (ca. 1933-1939) 1962
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what Hunter calls, "the advance guard of the hill system of the central India Plateau." Midnapur resembles Bankura more or less in topography; but it is not so hilly. It has its laterite soil, mohua and sal trees,—a characteristic back-ground inseparable from the Santals.

Distributed throughout this wide area live the Santal, a man of medium size but muscular and strong, with a complexion varying from light-brown to an ebony colour, almost beardless and his ox-eyed, merry women-folk. The physical features that distinguish them from the rest of the population are that they have a round outline and look rather stout. They have, what is called by Col. Dalton, "a blubbery style of face," noses broad with a depressed bridge, and hair black, straight, coarse and curly. The mouth is a large one and the lips thick and projecting; "the zygomatic arches prominent, while the proportions of the skull, approaching the dolichocephalic type, conclusively refute the hypothesis of their Mongolian descent."[1]

Although the theory of Mongolian descent of the Santal is no longer tenable, it is worth noting that faces of a Mongoloid type are sometimes seen amongst them. Rev. Bodding has seen "spots in the pigment of the skin of Santal children, which,

1 Ref. Risley, *People of India*, App. VIII, p. clvii.

3t Mukherjea O. Y-4, 8 (ca. 1933-1939) 1902
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144 in size, position and colour, resemble certain peculiar
143 blue spots found on Mongol children, which are said to be a distinct race-mark not found outside the Mongol people."[1]

Their Language

197 The Santals speak a language of their own. Linguists say that Santali belongs to the Muṇḍā family of languages, which in its turn belongs to the Austro-Asiatic sub-family, termed so by Peter Schmidt. According to Dr. Campbell, this language has reached a much higher stage of development than any other dialect of the linguistic stock to which it belongs and is spoken with little variation in idiom or pronunciation over the greater part of the Santali-speaking areas. Northern Santali or that spoken in Bhagalpur, Monghyr, the Santal Parganas, Birbhum, Bankura, Hazaribagh and Manbhum, is the language of an overwhelming majority of the tribe, and is more polished than Southern Santali, or that spoken in the remaining districts, as a dialect, or a group of dialects of it.[2]

[192] Like all other languages, Santali has drawn upon other languages, but the influence of Bengali seems

[113] 1 *Mongolian race-marks among Santals.* J.A.S.B., 1904, Part II, p. 26.

[113] 2 Ref. Introduction to Dr. Campbell's Santali Dictionary (Edn. 1933).

41 Biswas D, E-3, 4 (1931-1945) 1956
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TABLE IV.

The Frequencies of Zygotes of v, V; r, R & u, U genes in various races.

Races	vv	Vv	VV	rr	Rr	RR	uu	Uu	UU	Author
Pygmies	0.0	30.0	88.0	9.0	42.0	49.0	27.0	59.0	14.0	Abel'38
Bushmen	3.7	48.1	48.1	0.0	50.0	50.0	6.3	54.2	37.5	Weninger'38
Norwegians	37.0	50.5	12.5	2.3	38.4	59.3	17.0	53.5	29.5	Bonnevie
Germans	42.2	48.2	10.0	8.0	38.0	54.0	24.0	53.0	23.0	Abel
Austrians	46.1	43.9	10.0	1.0	37.1	61.8	18.0	51.0	30.4	Geyer
Italians	48.0	42.8	11.2	0.8	30.2	67.2	21.0	50.7	28.3	Abel'38
Rajputs (Jaunsar)	30.0	55.0	15.0	5.0	45.0	50.0	10.0	57.5	28.2	Singh
Oraons	42.4	49.3	11.8	8.5	47.1	44.9	19.2	55.4	24.9	Verma
Rajputs (Kulu)	47.9	43.7	8.3	8.3	52.0	39.5	14.6	62.4	23.0	Datta
Rajis	56.6	36.3	5.0	10.0	61.6	28.3	5.0	60.0	35.0	Tiwari
Bhotias	66.2	27.9	5.8	8.1	52.4	39.6	17.0	54.8	27.0	Tiwari
Santals	66.6	28.5	4.7	9.5	34.0	52.3	14.2	66.6	19.0	Biswas
Formosans	47.8	40.0	12.3	3.5	50.3	44.3	10.8	58.8	30.5	Okuda
Chilcans	47.8	45.8	16.4	5.5	33.6	61.1	12.4	52.0	35.0	Schaeuble
Chinese	74.2	21.4	4.2	2.8	44.2	52.8	14.2	54.2	31.4	Abel
Eskimos	98.4	1.5	0.0	25.4	42.3	32.3	18.3	57.9	23.4	Abel'34

From the table given above, depicting the frequencies of the Zygotes for general epidermal thickness (factors, v and V), the radial and the ulnar cushioning (r, R & u, U) of the various races, it is observed that the zygote VV is most frequent among the Negroes and goes on decreasing among the Caucasoids, Formosans and Indians reaching the minimum among the Mongoloids and particularly the Eskimos (Abel). The factors for radial and ulnar cushioning display less variation in the various races.

As regards the general epidermal thickness, the Santals, Bhotias and Rajis come very near with 66.6%, 66.2% and 56.6% frequencies respectively for the zygote

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(vv), 28.5%, 27.9 % and 38.3% frequencies respectively for the heterozygote (Vv). The zygote for thick epidermis (VV), of Santals has a frequency very near the Bhotias, Rajis and Chinese. 143

For Radial cushioning, again, the zygote (vv) places Santals with the Mongoloid people. But the zygote Vv and VV group them with the European White. The Ulnar Cushioning brings the Santals very near to the Bhotias and Rajputs of Kulu who have some Mongoloid strain in them. The Chinese, too, show a resemblance to the Santals in this repect.

TABLE V.

The frequencies of genes v, V; r, R; u and U in various races.

Races	v	V	r	R	u	U	Author.
Pygmies	25.5	74.5	30.0	70.0	56.5	43.5	Abel '38
Bushmen	27.7	72.1	25.0	75.0	35.4	64.6	Weninger '38
Norwegians	62.2	37.7	21.5	78.5	43.7	56.2	Bonnevie
Germans	68.3	34.1	28.0	72.0	50.5	47.5	Abel
Austrians	68.0	31.9	19.6	70.3	44.1	55.9	Geyer
Italians	67.4	32.6	24.7	75.3	46.3	53.5	Abel'38
Rajputs (Jaunsar)	57.5	42.5	27.5	72.5	44.9	54.6	Singh
Oraons	65.9	34.0	37.0	62.4	48.9	52.6	Verma
Rajputs (Kulu)	69.7	30.2	34.3	65.9	47.9	52.0	Datta
Rajis	75.7	24.1	40.8	59.1	35.0	65.0	Tiwari
Bhotias	80.1	19.7	34.3	65.8	44.2	55.1	Tiwari
Santals	80.9	19.0	28.5	71.4	47.6	52.3	Biswas
Formosans	67.8	32.6	30.6	69.4	40.2	59.8	Okuwa
Chibcans	65.7	34.3	22.2	77.8	38.4	61.6	Schaeuble
Chinese	84.9	14.9	24 9	74.9	41.3	58.5	Abel
Eskimos	98.5	0.5	46.6	53.3	46.5	51.5	Abel'39

By considering the above table for the gene frequencies of various races of the world, there is seen

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characteristic homogenity among the Santals, the Bhotias, the Rajis, the Rajputs of Kulu valley and the Chinese.

The dominant gene V for general thikness[1] of the epidermis, goes on decreasing from the Negroes, through the Caucasoids to the Mongoloids where it attains the minimum value. The Santal with a value of 19.0 comes very near to the Bhotias (19.7), Kajis (24.1) and Chinese (14.9). The gene (v) also remains in the same range for the Santals, Bhotias, Rajis and Chinese. For radial cushioning the Santals are very near the Rajputs of Jaunsar and the Germans, showing no Mongoloid affinities. But the genes for Ulnar cushioning categorize the Santals with the Bhotias, Rajputs of Kulu and the Eskimos.

ABO BLOOD GROUPS AMONG THE SANTALS.

The following pages dealing with serological data on various proto-Australoid and Mongoloid tribes already published by various authors have been incorported and analysed in the present work. The author, however regrets that during the course of his field investigations it was not possible to collect any serological data. [114]

1 [Erratum: this should read "thickness." Cf. errata sheet, category 116, p. ix -- Analyst]

TABLE I

Phenotype and Genotype Frequencies of the Santals composed with other Allied Ethnic Categories :

Ethnic Category	Phenotype Frequency					Genotype Frequency			Investigator
	No.	O	A	B	AB	p	q	r	
1. (a) Santal	407	31.70	21.38	35.63	11.30	.166	.258	.563	Sarkar and Sen
(b) Santal	339	33.04	20.94	34.81	11.21	.160	.240	.579	Sarkar
(c) Santal	68	25.00	23.53	39.71	11.76	...	...	...	Sarkar and Sen
2. Hill Male	242	41.32	24.79	27.27	6.61	.170	.185	.643	Sarkar and Sen
3. Plains Male	109	39.45	22.02	30.28	8.26	.156	.207	.628	Sarkar and Sen
4. Malpaharia	58	31.03	24.12	31.03	13.79	.186	.231	.557	Sarkar and Sen
5. Birjia	129	10.85	17.05	61.24	10.86	.198	.519	.329	Sarkar
6. Birhor	39	20.51	17.94	51.30	10.25	...	...	...	Sarkar
7. Birhor	102	31.37	35.29	23.53	9.80	...	...	...	Majumdar
8. Korku	140	20.00	28.57	37.86	21.05	.250	.313	.447	Macfarlane
9. Maria Gond	123	28.50	26.00	34.10	11.40	.204	.257	.534	Macfarlane
10. Munda	130	35.38	29.23	28.46	6.92	.219	.214	.577	Macfarlane
11. Ho	186	34.95	31.72	27.96	5.38		...	..	Majumdar
12. Lepcha	83	30.30	36.40	27.30	6.06	.241	.183	.550	Macfarlane

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Ethnic Category	Phenotype Frequency					Genotype Frequency			Investigator
	No.	O	A	B	AB	p	q	r	
13. Bhotia (mixed with Lepchas etc)	85	36.47	27.07	21.17	15.29	.241	.203	.604	Macfarlane
14. Bhotia (born in Central Tibet)	80	38.75	36.25	20.00	5.00	.234	.134	.622	Macfarlane
15. Bhotias (Almora)	144	18.06	15.27	50.69	15.97	.152	.404	.425	Tiwari
16. (a) U.P. Chamars	151	36.30	18.70	39.30	5.70	.131	.259	.609	Majumdar
(b) U.P. Doms (Hill)	125	36.00	20.00	33.80	10.20	.163	.249	.587	Majumdar
17. Khasa	200	35.17	29.57	29.57	5.89	...		...	Macfarlane
18. (a) Khasa Brahmins	102	29.80	32.90	31.00	6.30	.246	.234	.546	Majumdar
(b) Khasa Rajput	118	33.80	31.70	26.20	8.30	.228	.193	.581	Majumdar
(c) Artisan Castes	126	28.10	22.40	40.10	9.40	.180	.295	.530	Majumdar
19. (a) Kumaoni Brahman	108	25.92	27.78	31.48	14.15	.224	.249	.509	Tiwari
(b) Kumaoni Rajput	124	29.03	24.19	33.87	12.90	.191	.254	.539	Tiwari
(c) Kumaoni Doms	74	24.32	27.03	40.54	8.11	.224	.312	.493	Tiwari
20. (a) Kulu Brahman	37	43.24	21.62	24.32	10.82	.147	.164	.658	Sastry (Unpublished)
(b) Kulu Rajput	92	17.39	36.95	34.78	10.87	.320	.305	.415	Sastry (Unpublished)
(c) Kulu Artisan	24	25.00	29.17	29.17	16.66	.236	.236	.500	Sastry (Unpublished)
21. Tharu	241	27.10	17.00	37.50	18.40	.144	.284	.520	Mazumdar (Frequencies calculated by Tiwari)

Ethnic Category	Phenotype Frequency					Genotype Frequency			Investigator
	No.	O	A	B	AB	p	q	r	
22. Raji	80	26.25	21.25	42.50	10.00	.177	.317	.512	Tiwari
23. Tibetan	150	42.00	20.00	30.67	7.33	.147	.212	.641	Buchi
24. Hindus (Mixed Group)	1000	31.30	19.00	41.20	8.50	.149	.291	.559	Hirschfeld
E.I. Archipelago									
25. Buginese (Celebes)	217	34.6	30.4	27.6	7.4	.218	.200	.589	Lehman
26. Macassar (..)	195	28.7	29.7	30.8	10.8	.228	.234	.536	Lehman
27. Ambom	1471	35.9	20.9	20.9	2.3	.128	.128	.749	Bijlmer
28. Javanese	1346	39.9	25.7	29.0	5.4	.178	.198	.632	Bais and Verhoef

Sources:—(a) The Eastern Anthropologist, Vol. I No. 1 (1947). (b) Bulletin of the Department of Anthropology Vol. I No. 1 (1952). (c) The Anthropologist, Vol. 1 No. 1 (1954). (d) The Aboriginal Races of India by S.S. Sarkar (1954). (e) The Fortunes of Primitive Tribes by D.N. Majumdar (1944). (f) Serological Study of the people of Manali (Kulu) by D.B. Sastry (Delhi University Field Expedition Report, Unpublished). (g) Buchi, E.C. (1955) : Blood Groups of Tibetans; Bulletin the Department of Anthropology (India), Vol. 1 No. 2 p. 73.

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"other types may be found, but too few to be taken into account. All this proves mixture of blood at some time or other. What I would specially draw attention to in this connection, is the Mongoloid type, and types resembling what is found in Assam, Burma and further on"[1].

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[1]Bengal District Gazetteers—Santal Parganas—by L.S.S.O. Malley (1910), pp. 94 and 101.

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143 From the above table it appears that in the distribution of genes p, q and r the Santals fall closest to the proto-Australoids of India like the Hill Maler, Maria Gond, Malpaharia, Munda, on the one hand, to the southern Mongoloids like the Bhotia, Tibetan and Lepcha, and to the "partial" or mixed Mongoloids like the Tharus Rajis, Kumaoni Rajput etc, on the other. Because of the paucity of the data in most of the series represented in the table, it will be appropriate to say that the gene frequencies should be used cautiously. A very striking fact is the high incidence of group B among the castes of Northern India (particularly the 'exterior castes') which in combination with the strong doses of both the two agglutinogens is a characteristic feature of the Mundari and Monkhmer people[1].

143 144 The foregoing account is also suported[A] by the dermatoglyphic and somatometric analysis and as such it is highly appropriate to suggest that the Santals who are mainly proto-Australoids also show certain Mongoloid affinities on ethnic scales which in my opinion should be thoroughly investigated in Central India.

143 144 114 It is interesting in this connection to note Bodding's remarks regarding the Mongoloid affinity of the Santals. He states, 'The theory of Mongolian descent is not tenable, but there cannot be any doubt that Mongoloid blood has been introduced, either by the Santals taking Mongolian wives, or the Santal women having illegitimate children by Mongolian men". He further remarks,

[113] [1]Sarkar S.S. Macfarlane (E.W.E.), Blood Groups in India, American Journal of Physical Anthropology Vol. 29, (1942).

[A] [Erratum: this should read "supported." Cf. errata sheet, category 116, p. ix -- Analyst]